

SWBAT: observe interference and moire patterns

Jan 4-7:20 AM

Concept Sheet

~ 7 rows when we're done...

We'll fill in two terms (rows) today.

Concept	Meaning	Sym-bol	Units	Picture
FREQUENCY	HOW MANY PER UNIT OF TIME $\text{FREQ} = \frac{\#}{\text{TIME}}$	f $f = \frac{1}{T}$	hertz $\text{Hz} = \frac{1}{\text{sec}}$	
PERIOD	HOW MUCH TIME FOR ONE. $\text{PERIOD} = \frac{\text{TIME}}{\#}$	T $T = \frac{1}{f}$	seconds sec.	
TRANSVERSE	WHEN THE MEDIUM VIBRATES ACROSS THE DIRECTION THE WAVE TRAVELS.			
LONGITUDINAL	WHEN THE MEDIUM VIBRATES ALONG THE DIRECTION THE WAVE TRAVELS.			
AMPLITUDE	HOW FAR FROM THE MIDDLE.	A	meters m	
WAVELENGTH	HOW FAR FOR ONE "BACK & FORTH"	lambda λ	meters m	
WAVE SPEED	DISTANCE OF A WAVE TIME OF A WAVE	v	meters second m/s	

Feb 18-6:50 AM

Welcome!!!

H. Leslie Grebe

SECA Physics
Tuesday 15 April 2014

* Pick up:

- worksheet
- slip of paper for later

Prizes...

Centering

Opening Questions:

What happens when 2 waves meet?

How could we test different ideas about what happens?

Sep 7-7:04 AM

Interference: Predict, Explain, Observe

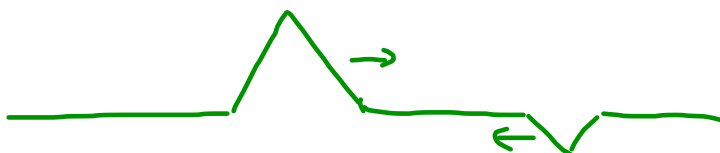


1) What will it look like as these two pulses meet in the middle? After?

OBSERVED

EXPLANATION: CANCELED OUT

FLAT



2) What will it look like after these two pulses meet in the middle if one is bigger than the other?

• IF IT FLIPS : SMALL ON TOP & BACK RIGHT

• IF IT BOUNCES OFF : SMALL ON BOTTOM & BACK RIGHT

• IF IT PASSES THRO : SMALL ON BOTTOM & STILL LEFT

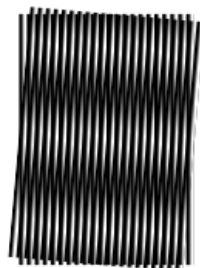
Apr 12-7:13 AM

Interference means

the result of adding waves when they meet.

$+ \quad -$

Visually, this is called a moiré pattern.



http://en.wikipedia.org/wiki/Moir%C3%A9_pattern

<http://www.youtube.com/watch?v=wbSHeRqnHNk>

Apr 19-7:28 AM

LANE LINES IN POOLS...

Name _____ Class _____ Date _____

Concept-Development Practice Page 25-3

Wave Superposition

A pair of pulses travel toward each other at equal speeds. The composite waveforms as they pass through each other and interfere are shown at 1-second intervals. In the left column, note how the pulses interfere to produce the composite waveform (solid line). Make a similar construction for the two wave pulses in the right column. Like the pulses in the first column, they each travel at 1 space per second.

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Add vertical displacements at each point: + up and - down.

CONCEPTUAL PHYSICS

thanks to Marshall Eilenstein

Chapter 25 Vibrations and Waves 117

Apr 19-7:19 AM

Daily 3 Questions

CP: Wave worksheet due Wed

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1) INTERFERENCE means the result from adding waves as they meet.

2) The visual result of combining light and dark patterns is called

- A) longitudinal
- ☒ B) Moire pattern
- C) frequency

3) When two pulses head towards each other and meet on a string, they will

- ☒ A) pass through each other
- B) bounce off each other
- C) neither

Apr 15-7:43 AM